

Kettering Energy Park, Kettering
Masterplan Transport Assessment

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Masterplan Transport Assessment

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SJT/RT/JA/22409-06 Preliminary Masterplan TA

Prepared by:

David Tucker Associates

Forester House, Doctors Lane
Henley-in-Arden
Warwickshire
B95 5AW

Tel: 01564 793598

Fax: 01564 793983

inmail@dtatransportation.co.uk

www.dtatransportation.co.uk

Prepared For:

First Renewable Ltd

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1.0 INTRODUCTION

1.1 David Tucker Associates (DTA) has been commissioned by First Renewable Ltd to review the transport implications of the proposed development under Policy 26 of the North Northamptonshire Joint Core Strategy that will connect to the existing and future renewable energy infrastructure at the site (wind turbines and PV Solar Farms) to provide new employment units for occupiers that have a high energy demand. The site location and the proposed layout are attached as **Appendix A**.

1.2 This report has been prepared in accordance with National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG). This Transport Assessment is a preliminary assessment to support the masterplan and will be supported by further detailed modelling for the purposes of the planning application.

1.3 The site is detailed under Policy 26 of the North Northamptonshire Joint Core Strategy (2011-2031) and it is confirmed that:

Policy 26 identifies land at Burton Wold as a suitable 'Energy Park' location to serve existing and planned development including the Kettering East SUE and complimentary employment uses. Its precise extent and mix of uses is to be determined through a Masterplan prepared in consultation with the local community and stakeholders for agreement with the local planning authority. The impacts of development at this location will be evaluated in greater detail through the consideration of any planning applications.

1.4 One of the texts of the Policy at bullet point e is that:

The development does not result in an adverse impact on the capacity and safety of the highways network and of public rights of way

1.5 The report considers the transport and highways implications associated with the proposals and is structured as follows:

Chapter 2: Policy Context

Chapter 3: Existing Conditions

Chapter 4: Development Proposals

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Chapter 5: Traffic Generation and Distribution

Chapter 6: Traffic Impact

Chapter 7: Conclusions

- 1.6 The Northamptonshire Strategic Transport Model was initially run for the masterplan development by WSP. Vectos were also commissioned to run a micro simulation model for the A14 within the immediate vicinity of the site.
- 1.7 The results of the modelling does not present any significant issues within the immediate vicinity of the site. Traffic impact at a couple of isolated locations will also require further local detailed assessment including the A510 / Woodford junction and traffic travelling through Finedon, particularly at the A6 /A510 junction.
- 1.8 Further detailed modelling will be undertaken as part of the Transport Assessment to support the planning application.

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2.0 POLICY CONTEXT

2.1 National Planning Policy Framework (July 2021)

2.1.1 In July 2021, the Government published a revised National Planning Policy Framework (NPPF). This report should therefore be read in the context of the new NPPF.

2.1.2 Paragraph 111 of the NPPF is clear that: *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe"*.

2.1.3 Within this context, the NPPF identifies in Paragraph 112 that applications for development should:

"a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."

2.1.4 Paragraph 113 of the NPPF goes on to state that: *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed"*.

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- 2.1.5 In reinforcing the principle of supporting sustainable development, paragraph 10 stipulates that at the heart of the Framework is *"...a presumption in favour of sustainable development"*.

Transport Assessments and Statements - PPG

- 2.1.6 Following directly on from the NPPF, in particular paragraph 32, the PPG states:

Local planning authorities must make a judgement as to whether a development proposal would generate significant amounts of movement on a case by case basis (i.e. significance may be a lower threshold where road capacity is already stretched or a higher threshold for a development in an area of high public transport accessibility).

In determining whether a Transport Assessment or Statement will be needed for a proposed development local planning authorities should take into account the following considerations:

- *the Transport Assessment and Statement policies (if any) of the Local Plan;*
- *the scale of the proposed development and its potential for additional trip generation (smaller*
- *applications with limited impacts may not need a Transport Assessment or Statement);*
- *existing intensity of transport use and the availability of public transport;*
- *proximity to nearby environmental designations or sensitive areas;*
- *impact on other priorities/ strategies (such as promoting walking and cycling);*
- *the cumulative impacts of multiple developments within a particular area; and*
- *whether there are particular types of impacts around which to focus the Transport Assessment or Statement (e.g. assessing traffic generated at peak times).*

- 2.1.7 The document advocates early consultation with key decision makers at an early stage through pre-application discussions to determine the scope of the technical work required to underpin the associated transport assessments and travel plans. The key issues it suggests that should be considered are:

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- *the planning context of the development proposal;*
- *appropriate study parameters (i.e. area, scope and duration of study);*
- *assessment of public transport capacity, walking/ cycling capacity and road network capacity;*
- *road trip generation and trip distribution methodologies and/ or assumptions about the development proposal;*
- *measures to promote sustainable travel;*
- *safety implications of development; and*
- *mitigation measures (where applicable) – including scope and implementation strategy.*

2.1.8 It acknowledges that the scope and level of detail in reports will vary from site to site, but suggests the following should be considered when settling the scope of the proposed assessment:

- *information about the proposed development, site layout, (particularly proposed transport access and layout across all modes of transport);*
- *information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;*
- *data about existing public transport provision, including provision/ frequency of services and proposed public transport changes;*
- *a qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of transport that would result from the development and in the vicinity of the site;*
- *an assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next three years);*
- *data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highways network;*
- *an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area;*
- *an assessment of the likely associated environmental impacts of transport related to*

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the development, particularly in relation to proximity to environmentally sensitive areas (such as air quality management areas or noise sensitive areas);

- *measures to improve the accessibility of the location (such as provision/enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;*
- *a description of parking facilities in the area and the parking strategy of the development;*
- *ways of encouraging environmental sustainability by reducing the need to travel; and*
- *measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads.*

In general, assessments should be based on normal traffic flow and usage conditions (e.g. non-school holiday periods, typical weather conditions) but it may be necessary to consider the implications for any regular peak traffic and usage periods (such as rush hours). Projections should use local traffic forecasts such as TEMPRO drawing where necessary on National Road Traffic Forecasts for traffic data.

The timeframe that the assessment covers should be agreed with the local planning authority in consultation with the relevant transport network operators and service providers. However, in circumstances where there will be an impact on a national transport network, this period will be set out in the relevant Government policy.

2.2 Local Planning Policy

2.2.1 Relevant local planning/ guidance documents include:

- Northamptonshire Transport Strategy for Growth. In response to the forecast growth outlined in the Milton Keynes and South Midlands (MKSM) Sub-regional strategy, Northamptonshire County Council has developed a Transport Strategy for Growth document which sets out an integrated framework to support the expected housing growth and associated economic growth in the county;

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- Northamptonshire Transportation Plan. The Northamptonshire Transportation Plan, which was published in March 2012, is Northamptonshire's Local Transport Plan and sets out the transport policies, objectives and vision for the County for the long term; and
- North Northamptonshire Joint Core Strategy. The Core Strategy, which was adopted in June 2016, *"outlines a big picture to be developed in more detail through the Part 2 Local Plans prepared by the District and Borough Councils"*.

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3.0 EXISTING CONDITIONS

3.1 Site Location

3.1.1 The proposed development is located in Kettering Energy Park to the south-east of Kettering, as shown on the site location plan attached as **Appendix A**. The site is bound to the east by the A510 and to the north, south and west by other areas of Kettering Energy Park.

3.2 Local Highway Network

3.2.1 The site is very well located in terms of access to the wider highway network. The A14 Trunk Road runs east-west to the north of the site, the A6 runs to the west and the A510 to the east. The development site will take access off Wold Road to the north.

3.2.2 The A510 is a rural single carriageway road of around 7.0m in width. In the vicinity of the site, the road is generally of a good standard with kerbed edges and wide grass verges, leading to ditches and then boundary hedgerows. The road has positive drainage and is unlit. The road is subject to the national speed limit of 60mph and, in general, overtaking is not restricted, although there are some areas where horizontal alignment has led to the introduction of solid central lines.

3.2.3 In practice, whilst the A510 is of a relatively high standard, it essentially serves as a local access route from the A14 to Finedon, Wellingborough and Rushden.

3.2.4 To the north, the A510 connects to the A14 at Junction 11, a grade separated junction with dumbbell roundabouts and a single carriageway overbridge. The junction arrangement is lit, with east and west on and off slip roads provided.

3.2.5 The A14 runs east – west and forms part of the core Strategic Road network. The Junction 11 slip roads and the mainline itself fall under the jurisdiction of Highways England.

3.2.6 To the south, the A510 connects with the A6 at a roundabout junction in the centre of the town of Finedon. The A6 is of similar or better highway standard than the A510, with single dualling at key junctions. It connects to the A14 at Junction 10, a large grade separated roundabout.

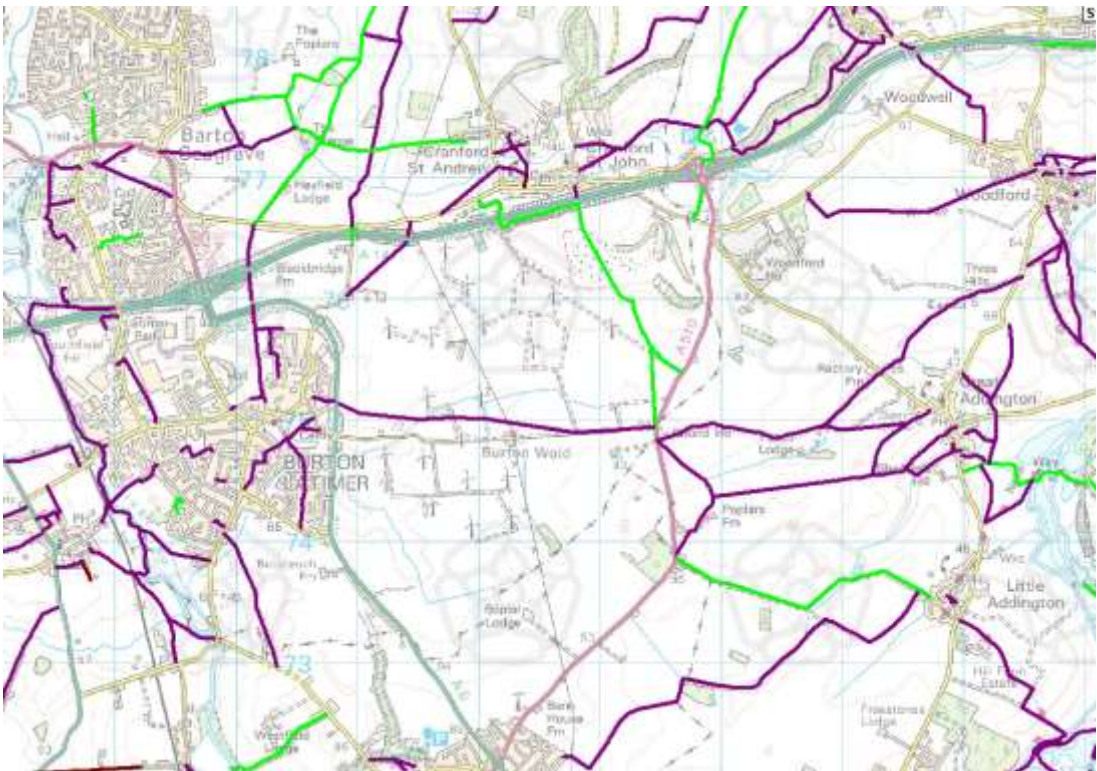
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- 3.2.7 In December 2014, the Government announced that it would provide funding towards the cost of a new A14 Junction 10A to the north-west of the site, providing access to new housing, education and employment developments in the area. Planning and construction are expected to cost up to £40m which will now be funded by the government and the developers, Alledge Brook.
- 3.2.8 Junction 10A will be situated just under a kilometre east of the current Junction 10 and will connect to a re-aligned A6 north of Burton Latimer. It will work with a modified Junction 10 (involving the closure of the east facing slip roads at Junction 10) to relieve existing and future traffic congestion on the local road network, open up the second half of East Kettering for housing and employment, and also improve traffic flow on the A14.
- 3.2.9 In the 2020 Annual Assessment of Highways England for RIS 1 the A14 junction 10a scheme was paused due to it not currently demonstrating value for money.

3.3 Pedestrian and Cycle Access

- 3.3.1 There are a number of Public Rights of Ways (PROWs) located within the vicinity of the site, including the UA6 footpath which runs along the existing access road, and the GF17 bridleway which runs north of the existing access. The PROW are shown below:



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3.3.2 The network includes a bridleway (shown in Green) which runs to the north of the site, across the A14 (via an underpass) to the northern side and connects to a network of routes towards Kettering. A footway runs east / west within the site and connects to Burton Latimer.

3.3.3 A plan showing the existing PROWs with photographs along the routes is attached as **Appendix B.**

3.4 Public Transport Provision

Bus

3.4.1 The existing bus network in the vicinity runs predominantly through Burton Latimer to the west of the site. The nearest bus stops are currently around 2km from the centre of the site.

3.4.2 Bus No.48 provides an hourly service between Kettering and Wellingborough. Bus No.50 provides an hourly service between Kettering and Rushden and then continuing to Bedford.

3.4.3 There are currently limited opportunities within the vicinity of the site for travel by bus, due to its rural location. A staff shuttle bus will be considered as part of the proposal to cover the travel needs of future employees.

Rail

3.4.4 The closest railway station to the site is Wellingborough Railway Station, which is located approximately 9km south. The station is managed by East Midlands Railways and facilities at the station include a 531 space car park with 4 accessible spaces and 42 cycle storage spaces which are sheltered and covered by CCTV.

3.4.5 There is a half-hourly service to London St Pancras and hourly services to Nottingham via Leicester and to Corby, both operated by Meridian trains. During peak hours, one Nottingham service is extended to start and finish at Lincoln via Newark and one Corby service goes to and from Melton Mowbray.

3.4.6 Faster East Midlands Railway services to and from Leeds, Sheffield, Derby and Nottingham

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run through Wellingborough at high speed, but do not call outside of peak hours. Interchange with faster services can be made at Leicester.

3.4.7 At the weekend, there is one train per day to York and, in the summer months, the York service on a Saturday is extended to and from Scarborough.

3.4.8 Kettering Station is located around 10km drive or cycle from the site. It provides services from London St Pancras, Corby and Nottingham with roughly four services an hour to and from London and 2 per hour to and from Corby and Nottingham (via Leicester). The station has parking for 160 cycles and around 500 cars.

3.5 Existing Traffic Flows

3.5.1 Traffic surveys were commissioned by DTA for the local road network, which included the following:

- A seven-day ATC speed survey on the A510 on the site frontage, completed between Tuesday 30th June and Monday 6th July 2015; and
- A 12-hour classified manual turning count survey was undertaken on Wednesday 1st July 2015 at A14 Junction 11.

3.5.2 A summary of the ATC data can be seen in **Table 1** below with the full survey data is attached as **Appendix C**.

Table 1 - Summary of ATC Data

Direction	Total Vehicles	5-day Average	7-day Average	Average 85 th %ile speeds	Average Mean Speed
Northbound	16967	2740	2424	59.7	51.6
Southbound	18070	2913	2581	59.6	51.9

3.6 Personal Injury Collisions

3.6.1 Personal Injury Collision (PIC) data has been reviewed for the most recent five-year period (2017-2021). The search area covered the A510 up to Junction 11 and included the slip roads/ immediate mainline of the A14.

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- 3.6.2 In total, 13 PIAs were recorded including 3 “serious” accidents. One “serious” accident occurred on the A510 south of the site, another on the A510 near the junction with Cranford Road, and the third on the A14 mainline carriageway to the west of junction 11.
- 3.6.3 None of the accidents occurred on the slip roads at junction 11. Three of the slight accidents occurred on the A510 adjacent to Round House Farm, near to the proposed access location. All of the accidents involved single vehicles.
- 3.6.4 Overall, the low level of incidence of relevant PICs within the assessment area prevents discernible patterns or trends from being identified. It is therefore concluded that there are no existing highway safety issues that would need to be addressed as part of the proposals.

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4.0 DEVELOPMENT PROPOSALS

4.1 Introduction

4.1.1 This chapter sets out the development proposals for the site, including site layout and vehicle access.

4.2 Proposed Use

4.2.1 The proposals will be for a hybrid planning application for the development of an Energy Park adjacent to the Burton Wold Wind Farm comprising: Outline planning permission for provision of flexible employment uses across use classes E (office, research and development and light industrial), B2 and B8, additional energy infrastructure (including battery storage, 132kv grid connection and ground mounted solar pv) access to the site from the A510, new estate roads, utility connections, landscape and drainage works, provision of a receptor area for biodiversity and other associated works. All matters reserved apart from the means of access to the site, with detailed permission sought for the solar farms, battery storage, 132kv grid connection site and initial enabling works and associated works relevant to these detailed aspects.

4.2.2 The employment elements be for up to circa 390,000sqm. The site location and the proposed layout are attached as **Appendix A**.

4.3 Vehicle Access

4.3.1 It is proposed that access to the site would be taken off the A510 via a new 4 arm-roundabout junction. An indicative access design is shown on **DTA Drawing 22409-02e**. The fourth arm will provide a new access to Round House Farm.

4.4 Vehicle Parking

4.4.1 Car parking will be provided on site in accordance with the standards contained within Northamptonshire County Council's Supplementary Planning Guidance (2019) on parking standards which can be seen in **Table 2** below.

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Table 2 - Northamptonshire County Council's Parking Standards

Use	Vehicle	Cycle	Motorcycle/ Scooter	Disabled
B1	1 space per 30sqm	1 space per 100sqm for staff plus 1 space per 200sqm for customers	1 space + 1 per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	10% of the total car parking spaces
B2	1 space per 50sqm	1 space per 200sqm for staff plus 1 space per 200sqm for customers		
B8	1 space per 120sqm	1 space per 500sqm for staff plus 1 space per 1000sqm for customers		

- 4.4.2 Cycle parking will be provided close to the entrance of the building in a secure, light and convenient location.
- 4.4.3 Parking provision is based on B8 standards which will include car parking for cars and HGVs. Fewer loading/unloading bays would typically be required for B1c/B2 uses therefore this proposed level is more than adequate.

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5.0 ACCESS AND SUSTAINABLE TRANSPORT STRATEGY

5.1 Mobility Hub

5.1.1 Support for personal modes of transport, such as electric bikes will be considered and there is potential for a mobility hub at the site.

5.1.2 The changing technology and patterns of personal mobility can be further supported by on-site provision of mobility hubs. Mobility hubs located in visible and accessible locations within the site provide travel information and co-located facilities for public transport and active travel modes together with community facilities where appropriate.

5.1.3 It is envisaged that there will be adaptability in the provision of mobility hubs to maximise the relevance of the hubs for the community within which the facilities may include:

- Package Delivery Lockers.
- Mini Play area.
- Café / Co -working spaces.
- Bus interchange within the site.
- EV charging.
- Community car share scheme with EVs.
- Cycle Lockers for community bike share.
- Fixed bike repair facilities.
- Digital information pillar.
- Wifi / phone charging hub.
- Shared ownership/Hire E Bikes or Scooters (A community owned facility to share usage of E bikes and scooters: <https://como.org.uk/shared-mobility/community-schemes/community-bike-share/>).

5.1.4 Community Car Share Scheme can significantly reduce travel demands. Recent surveys on car sharing suggest:

- Car Clubs can reduce car parking spaces by 25%,
- Reduced cost of living
- Valuable sales asset

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- Improvements air quality through use of Hybrid or Electric Provision
- Health benefits. Surveys from Netherlands suggest community car share schemes can reduce car usage by 26%, increase cycling by 10% and walking by 16%.

5.2 Pedestrian and Cycle Access

- 5.2.1 Footway/ cycleways will be included along the main estate road and a cyclist connection will be included through the Burton Latimer (this will be diverted around the retained farm buildings on Wold Road). The proposed location of this can be seen in **Appendix E**.
- 5.2.2 Contributions to improve off-site cycle/ bridleway infrastructure to increase potential for cycle access to the site (e.g. from Kettering Town Centre and/ or the railway station) will be considered.

5.3 Proposed Bus Strategy

- 5.3.1 The Strategy focuses on public transport aims under two groups:

Direct Aims

- Site Commercial Viability, i.e. that operators on the site are able to recruit sufficient workforce.
- Local Economic Prosperity, i.e. full utilisation of the site to maximise its logistics usefulness to local industry and support their retention and growth, and encourage inward investment to the area.

Indirect Aims

- Economic Fairness and Redistribution, i.e. provide access to employment opportunities for those not able to afford to run a car.
- Social Inclusion, i.e. provide access to employment for those not able to drive for non-financial reasons, e.g. health condition that prevents holding a driving licence.
- Environmental Impact, i.e. reduce transportation externalities by promoting use of sustainable modes.

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5.3.2 In terms of specific objectives, the catchment should be considered against the following; although (c) is of less relevance at this stage.

- (a) Workforce that lives within a 30 minutes door-to-door drive time of the site.
- (b) Number of low-income households within a 10-minute walk of a direct bus service to the site.
- (c) Preventing highway traffic congestion by attracting potential car users to bus – and other sustainable modes – and thus a lower car-driver modal share.

5.4 Site Location and Public Transport Context

5.4.1 There are a number of significant warehouse operators in and around the region who are actively promoting shift change buses to serve the sites. Discussions with the operators confirm that provided buses are running with sufficient patronage, they should be self-supporting and hence sustainable in the long term.

5.4.2 For example, Amazon at Bardon in Leicestershire has significant demand and the initial Arriva service had to be upgraded to a double decker within a week to meet demand. That service is running from the site to Leicester. Although of a larger scale, Magna Park is looking to support routes to three key destinations (Hinckley / Rugby and Leicester).

5.4.3 There are no existing significant bus services running past the site. Based on the above catchment area (Figure 1), providing for improved public transport connections based on shift change patterns would suggest the need for a link from the following between Kettering and Wellingborough.

5.4.4 A 30-minute drive time isochrone includes:

- Wellingborough / Northampton;
- Kettering (including the station);
- Corby

5.4.5 A service between Corby and the site via Kettering would take approximately 30 – 35 minutes plus some additional time depending on the number of stops. Direct services

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between Northampton and Wellingborough would take 28 mins and 11 mins respectively.

5.4.6 It is considered with a well-priced and reliable bus service mode share of around 10-12% could be achieved.

5.5 Likely Catchment and Potential Bus Services

5.5.1 It is generally expected that the shift change times for frontline operational staff would follow the standard three-shift pattern for 24-hour working, i.e. 6am-2pm, 2pm-10pm and 10pm-6am; some occupiers might run a two-shift pattern, e.g. 7am-7pm and 7pm-7am or their own variants of that. There would also be management and administration staff on-site: these are expected to work typically between 8.30am and 5pm.

5.5.2 The bespoke shuttle bus services would be tailored to shift change times, which could vary between site uses and across the year; seasonal variations in shift patterns are typical for logistics operations.

5.5.3 As set out above it is likely that demand for services would be between Kettering and Wellingborough with commutes continuing via Kettering or Wellingborough Railway Stations where required.

5.5.4 The movement corridors which these relate to are shown on **Appendix D**. Also shown are the existing bus corridors local to the site.

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6.0 TRAFFIC GENERATION AND DISTRIBUTION

6.1 Vehicle Traffic Generation

- 6.1.1 To assess the potential traffic movements from the development, the TRICS database (v7.5.4 online) was used. This database contains surveys of the vehicle and multimodal trip generation of a wide variety of sites which are classified by land use and various other attributes.
- 6.1.2 The traffic generation in this section is based on the masterplan floor space of up to 370,000sqm of floor space. A total of 390,000sqm of floor area will be assessed as part of the Transport Assessment to support the planning application.
- 6.1.3 The policy does not specify the land use or area and these decisions will be down to a masterplan review and so 50% B2 and 50% B8 data has been adopted. The TRICS database was therefore interrogated for surveys relating to 'Land Use 02 – Employment/ D – Industrial Estate' and 'Land Use 02 – Employment/ F – Warehousing (Commercial)', with surveys in London, Scotland, Wales, and Ireland manually excluded. The TRICS outputs are attached at **Appendix F**. The resulting trip rates are summarised in **Tables 3 and 4** along with the proposed traffic generation.

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Table 3 - Vehicle Trip Rates and Generation – Scenario 1

	In			Out		
	Lights	OGV1&2	Total	Lights	OGV1&2	Total
B2						
08:00-09:00	0.298	0.020	0.318	0.095	0.016	0.111
	551	37	588	176	30	205
17:00-18:00	0.053	0.010	0.063	0.320	0.010	0.330
	98	19	117	592	19	611
07:00-19:00	1.626	0.220	1.846	1.619	0.214	1.833
	3008	407	3415	2995	396	3391
B8						
08:00-09:00	0.081	0.062	0.143	0.013	0.037	0.050
	150	115	265	24	68	93
17:00-18:00	0.009	0.008	0.017	0.081	0.013	0.094
	17	15	31	150	24	174
07:00-19:00	0.623	0.398	1.021	0.638	0.402	1.040
	1153	736	1889	1180	744	1924
Total						
08:00-09:00	701	152	853	200	98	298
17:00-18:00	115	34	48	742	43	785
07:00-19:00	4161	1143	5304	4175	1140	5315

6.1.4 The second scenario being tested is 100% B8 which is summarised below:

Table 4 – B8 Vehicle Trip Rates – Scenario 2

	In			Out		
	Lights	OGV1&2	Total	Lights	OGV1&2	Total
08:00-09:00	0.081	0.062	0.143	0.013	0.037	0.050
	243	186	429	39	111	150
17:00-18:00	0.009	0.008	0.017	0.081	0.013	0.094
	27	24	51	243	39	282
07:00-19:00	0.623	0.398	1.021	0.638	0.402	1.040
	1869	1194	3063	1914	1206	3120

6.2 Vehicle Trip Distribution

6.2.1 The most recent origin/ destination (OD) data from the 2011 Census has been used to estimate the future distribution of commuter traffic associated with the development proposals for the site. For this, the Middle Super Output Area (MSOA) of Kettering 011, which includes Latimer Business Park and Station Road Industrial Park, was selected. This information is summarised in **Table 5** and the OD data is attached as **Appendix G**.

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Table 5 – 2011 Census Distribution

Residential Origin	Percentage
Kettering	45.9%
<i>Kettering 001</i>	<i>1.3%</i>
<i>Kettering 002</i>	<i>3.4%</i>
<i>Kettering 003</i>	<i>2.5%</i>
<i>Kettering 004</i>	<i>3.3%</i>
<i>Kettering 005</i>	<i>3.4%</i>
<i>Kettering 006</i>	<i>3.4%</i>
<i>Kettering 007</i>	<i>4.8%</i>
<i>Kettering 008</i>	<i>3.6%</i>
<i>Kettering 009</i>	<i>2.9%</i>
<i>Kettering 010</i>	<i>4.6%</i>
<i>Kettering 011</i>	<i>12.3%</i>
Wellingborough	17.0%
East Northamptonshire	10.1%
Corby	8.8%
Northampton	8.4%
Daventry	2.5%
Harborough	1.5%
Other	5.8%
Total	100.0%

6.2.2 The assignment of the development generated vehicle trips onto the adjacent highway network was based on the Census workplace origin data, with residential locations assigned to the network through the use of online routing software. This methodology was applied to all light vehicle trips associated with the proposed development. The resulting assignment of traffic is summarised in **Table 6** and shown on **Figure 1**.

Table 6 – Car Trip Distribution

Highway Link	% Traffic
A510 (South)	29%
Cranford Road	2%
A14 (East)	4%
A14 (West)	65%
Total	100%

6.2.3 In terms of HGV movements, to provide a robust assessment of junction operation it was assumed that 100% of HGV traffic would route through A14 Junction 11.

6.2.4 The distribution of movements on the highway network is shown in **Figure 2**.

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7.0 TRAFFIC IMPACT ASSESSMENT

7.1 Introduction

7.1.1 It was agreed with North Northamptonshire Highways that an initial run of the NSTM would be undertaken to assess the potential impacts of the development to inform the ongoing progression of the masterplan. The model run included two scenarios based on the traffic flows set out in section 5 as follows:

DS1 – 50% B2, 50% B8 and

DS2 – 100 % B8.

7.2 Model Information

7.2.1 The initial run included the following tasks:

Table 7 – Initial NSTM Model Run

Base Model Validation	Assess Base model validation (link flows & junctions) and produce JTCGEH matrices and GEH plots 2026 ZOI modelling for 2 development options: confirm and code in development assumptions ; run NSTM demand model to create peak hour matrices; review and refine demand model outputs to create final matrices; Overall Junction V/C plots (see for e.g. Towcester North SUE V/C plots) comparing against Reference Case
2026 Turning Matrices DM	Extract Turning Flows for with and without development for up to 5 junctions
2031 Turning Matrices DM	Confirm and run model. Extract Turning Flows for with and without development for up to 5 junctions

7.3 Model Outputs

7.3.1 The initial outputs of the model have been presented in V/C (Volume to Capacity Plots) for the two scenarios for a future year of 2026 and 2031.

7.3.2 Committed development assumptions for these scenarios is attached at **Appendix H**.

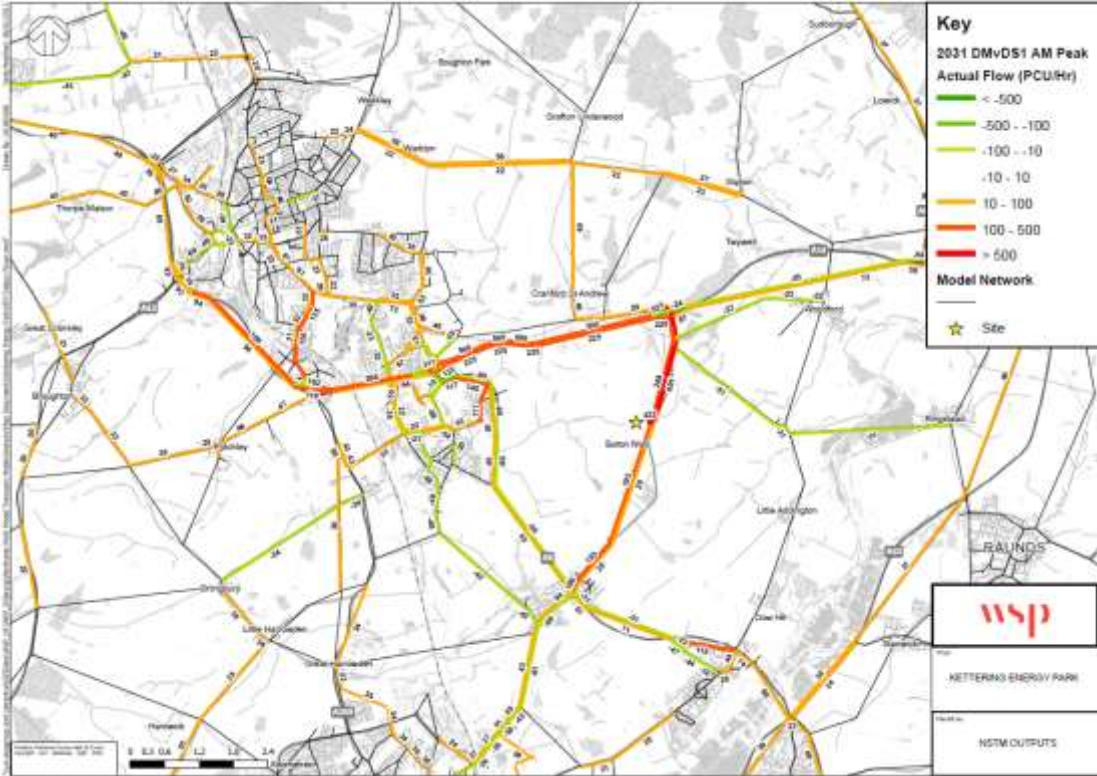
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7.4 Overall Traffic Distribution

7.4.1 The full detail of the net change in flows are provided at **Appendix I**. The net change in flows as a result of the development based on Scenario 1 (the larger traffic generator) for the AM/PM peak is set out below in **Figure 3 and 4**.

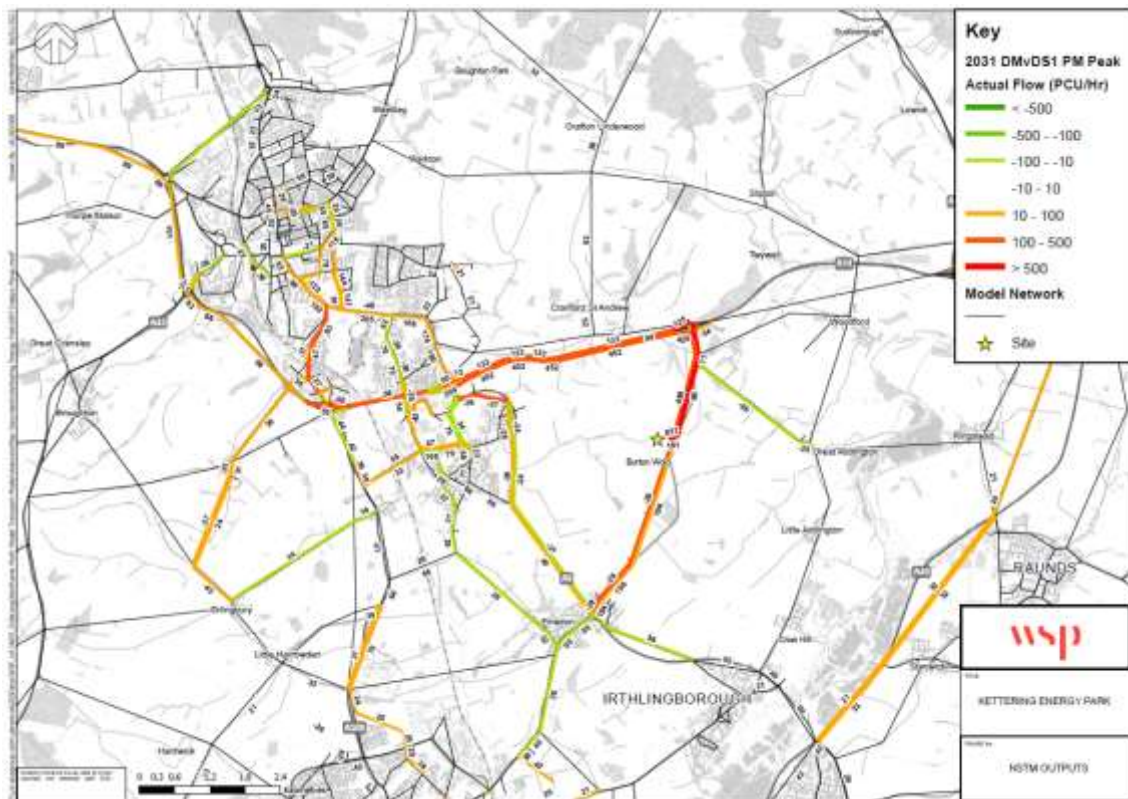
Figure 3 – 2031 AM Peak flows – DS1 - DM



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Figure 4 – 2031 PM Peak flows – DS1 - DM



7.4.2 As can be seen the predominate flow changes occur, as expected on the A14. There is a relatively high increase in flow south through Finedon. As described in the following sections, detailed capacity assessment will be required through that southern section.

7.5 HGV Distribution

7.5.1 The NTSM currently assumes all HGV traffic route north towards the A14. This accommodates predominant demand towards the M6 / M1 corridor to the east and A1(M) corridor to the west.

7.5.2 Movements to the M1 south are expected to be accommodated via the key strategic routes on the A1(M) which for example is the quickest route to London.

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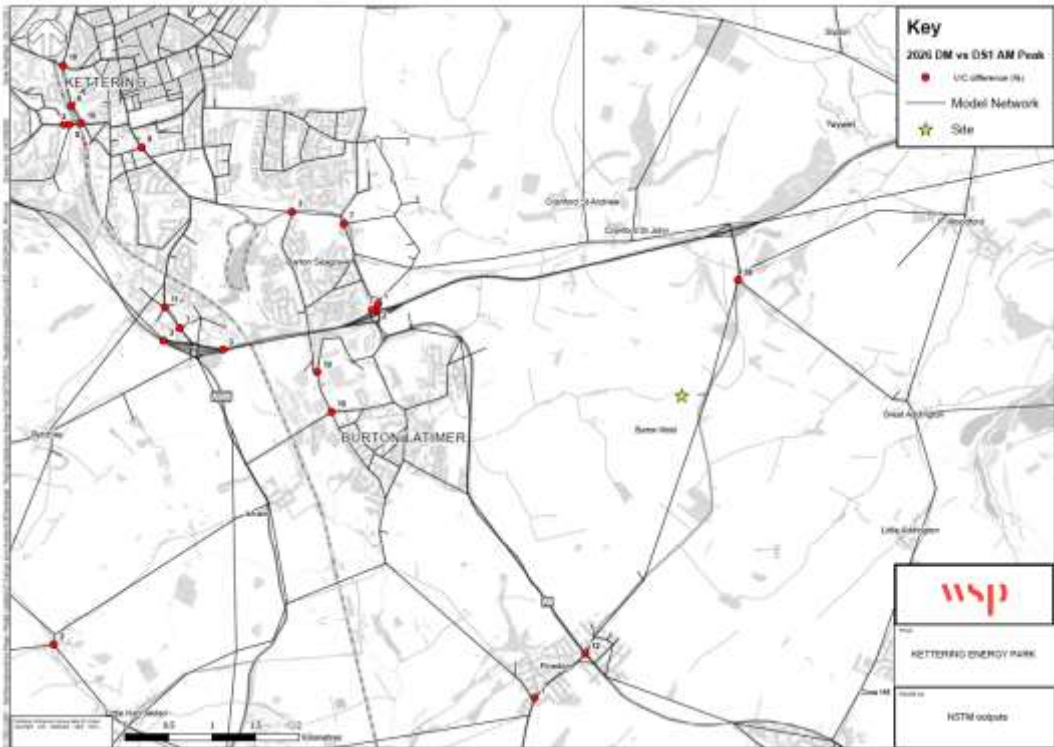
7.6 Volume to Capacity Junction Impacts

7.6.1 The following figures show the outputs from the model in terms of VC changes. They should be read in conjunction with the more detailed outputs provided at **Appendix J**.

7.6.2 All of the outputs show that the site access and Junction 11 of the A14 will remain below 75% VC in all years and assessment scenarios. In the 2026 case the following conclusions can be reached:

7.6.3 2026 AM Peak. There is no significant change in junction operation generally as a result of either development scenario. There is one junction / link between Hanwood Park Avenue and Junction 10 where the VC changes from amber (85%- 100%) to red (over 100%). Whilst there a number of junctions which change from yellow ((75% to 85%) to amber the overall net change in VC is generally minimal. This is shown below for D1 as the higher traffic generation case.

Figure 5 – 2021 VC Changes DS1-DM – AM Peak



7.6.4 2026 PM Peak. There is no significant change in junction operation generally as a result of either development scenario. There are no junctions where the VC changes from amber

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(85%- 100%) to red (over 100%). Whilst there are a number of junctions which change from yellow (75% to 85%) to amber the overall net change in VC is generally minimal. This is shown below for D1 as the higher traffic generation case.

7.6.5 In the PM Peak there is a change in VC at Junction 10 of around 12% but the overall VC remains yellow (i.e less than 85%).

Figure 6 – 2026VC Changes DS1-DM – PM Peak



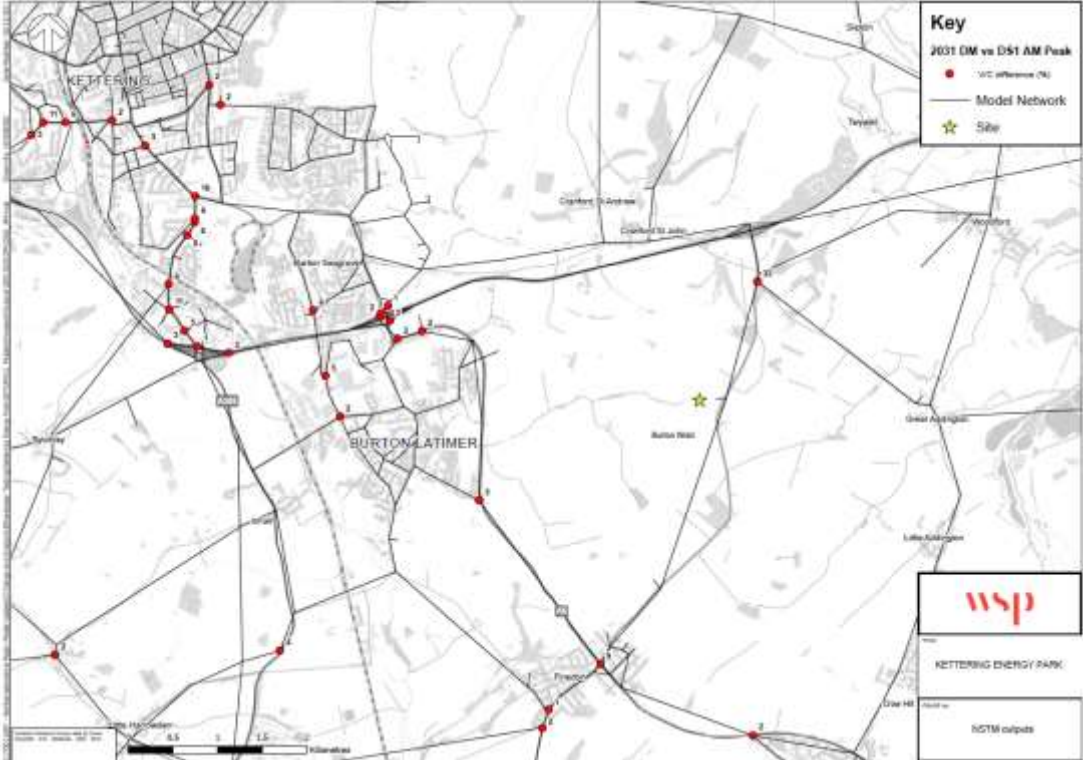
7.6.6 2031 AM Peak. By 2031 the network is generally suffering more congestion. This is principally as a result of wider growth and the fact that the WeWaA scheme and A14 junction 10A schemes are included as committed highway schemes at this stage. As with the 2026 scenario net change in VC is relatively modest but items to note are that:

- 1) The minor junction with the A510 and the Woodford road is shown to be approaching capacity.
- 2) Junctions 9 and 10 experience further delays and impact, albeit predominantly from growth rather than the development – as demonstrated by the 2026 assessment year test.

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Figure 7 – 2031 VC Changes DS1-DM – AM Peak



7.6.7 2031 PM Peak. As with the AM peak, by 2031 the network is generally suffering more congestion. This is principally as a result of wider growth and the fact that the WeWaA scheme and A14 junction 10A schemes are included as committed highway schemes at this stage. As with the 2026 scenario net change in VC is relatively modest. In addition to those junctions there is also a marginal worsening of junction operation in Finedon.

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Figure 8 – 2031 VC Changes DS1-DM – PM Peak



7.7 Strategic Delay Impacts

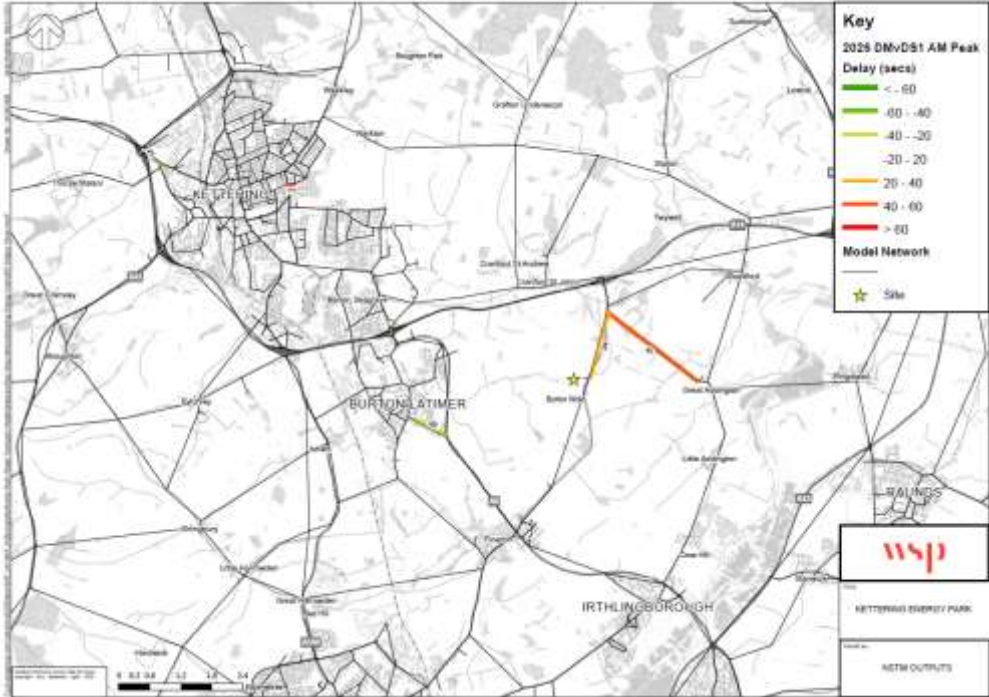
7.7.1 The following figures show the outputs from the model in terms of difference in delays arising from the proposal from the baseline. They should be read in conjunction with the more detailed outputs provided at **Appendix K**.

7.7.2 2026 AM Peak. This shows that generally there are no material changes in delay on the network for DS1. There is an impact on the Great Addington Road as identified above. There is a short link within Kettering which shows an increase but this is isolated and assumed to be “modelling noise”.

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Figure 9 – 2026 Delay Changes DS1-DM – Am Peak



7.7.3 2026 PM Peak also shows limited change in network delay:

Figure 10 – 2026 Delay Changes DS1-DM – Am Peak



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7.7.4 2031 AM Peak and PM Peak By 2031 there is a change to the impact in that some worsening of the J10 capacity as also identified above in respect of VC outputs.

Figure 11 – 2031 Delay Changes DS1-DM – Am Peak



Figure 12 – 2031 Delay Changes DS1-DM – PM Peak



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7.8 Summary of Impacts

7.8.1 Overall the modelling shows, as expected that the main traffic draw for development traffic is on the A14 west towards Kettering. There are also demands through Finedon which will need review but generally there are no significant changes in capacity at individual junctions. The key conclusions at this stage are as follows:

- The modelling shows no capacity issues at J11, the first point of impact with the Strategic Road Network.
- The change in V/C at the A510 / Woodford junction are marked, but from a very low base. Whilst this junction will need to be tested at a detailed local level, no significant adverse impacts are expected.
- Traffic travelling through Finedon will require further appraisal, particularly at the A6 /A510 junction, which will need to be tested at a detailed local level.
- Depending on the final mix of development and uses, Junction 10 will require detailed assessment in due course. The modelling at present does not include the physical mitigation relating to Hanwood Park. That site is subject to a new outline planning application (Reference NK/2021/0292) and includes an assumption that the major infrastructure will be provided by 2031 (see Appendix H). That work includes the Weekley Warton Avenue (WeWeA) link and a new junction 10A.
- Whilst that junction was included in RIS 1, it was excluded form RIS2 and timescales and delivery are unconfirmed. At this stage the modelling excluded these works and clearly if they do come forward within the timescales of Kettering Energy park that would resolve existing capacity constraints at Junction 10.

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7.9 VISSIM Microsimulation

- 7.9.1 Vectos have development a VISSIM microsimulation model of the A14 extending from junction 7 to junction 11. The model also included sections of the A43, A509 and A6 corridors. The model included baseline flows growthed to 2025 using TEMPRO growth to develop a reference case to which development traffic flows were added.
- 7.9.2 The modelling results reported some delays reported south of the site access roundabout due to the level of traffic entering the site in the AM peak. The site access roundabout has been reviewed in further detail and the entry widths increased on the approaches to provide additional capacity. In any event, a stand-alone assessment will be undertaken as part of the detailed modelling work as part of the planning application.
- 7.9.3 In regard to the operation of the A14, development trips did not appear to create any significant issues. There is some queuing in the AM peak on the northbound off-slip at junction 7, however these are present in the reference case as well and the development only adds around 30 trips to this approach. In the PM peak there are some delays on the northbound off-slip at junction 8, however the queue does not extend back to the mainline.

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8.0 CONCLUSIONS

- 8.1.1 This Transport Assessment reviews the transport implications of the proposed development to provide circa 370,000sqm of new employment units across uses B1, B2 and B8 that will connect to the existing and future renewable energy infrastructure at the site (wind turbines and PV Solar Farms) to provide new employment units for occupiers that have a high energy demand.
- 8.1.2 This is a preliminary Transport Assessment to support the masterplan for the site. A further Transport Assessment with more detailed modelling will be provided for the purposes of the planning application.
- 8.1.3 Access to the site will be provided via the A510 via a new four arm roundabout junction.
- 8.1.4 Improvements to the pedestrian and cycle connections will be made to Burton Latimer where the nearer public bus services are located. The site will also benefit from bus shuttle services to and from the main nearby settlements at shift change times.
- 8.2 Initial runs of the NSTM and VISSIM microsimulation model do not identify any significant issues, however junction 10 of the A14 may require further review depending on the timing of the Hanwood Park application which is set to provide major improvements at this location. Traffic impact at a couple of isolated locations will also require further local detailed assessment including the A510 / Woodford junction and traffic travelling through Finedon, particularly at the A6 /A510 junction.
- 8.3 In any event, this will be reviewed further as part of the Transport Assessment for the planning application.

Drawings

Figures

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

